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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/775,528	02/09/2004	Ronald Neal Dow	NSC-P05798	1030

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EXAMINER
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STERRETT, JEFFREY L

ART UNIT	PAPER NUMBER
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2838

DATE MAILED: 02/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/775,528	<b>Applicant(s)</b> DOW, RONALD NEAL	
	<b>Examiner</b> Jeffrey L. Sterrett	<b>Art Unit</b> 2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-9,11,12,15 and 19-21 is/are rejected.
- 7) ☒ Claim(s) 3,4,10,13,14 and 16-18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
2. Claim 15 is objected to because in the last line "said output device" lacks proper antecedent basis. Appropriate correction is required.
3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 8, 9, 15, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Dobkin et al (US 5,274,323).

Dobkin et al discloses a low dropout voltage regulation circuit (100) comprising an input comparison stage (200 or Q15 and Q20 [see lines 43-45 of column 5]) having inverting (-) and non-inverting (+) inputs and an output and comprising first (Q15) and second (Q20) pnp transistors; a bandgap reference voltage circuit (210 or Q16-Q19 [see lines 19-21 of column 5]) coupled to the non-inverting input of the input comparison stage; a low dropout output stage (120) coupled to the inverting input of the input comparison stage, an input voltage node (102), and an output voltage node (104); a gain stage comprising a pnp transistor unity gain buffer device (Q12 [see lines 64-66 of column 5]) providing isolation between the output of the input comparison stage and a

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drive circuit (Q4, Q9, Q10, and DRIVE) which is coupled to the low dropout output stage; and a capacitor (C2 and/or C3 [see lines 4-9 of column 7]) coupled to the pnp transistor unity gain buffer device and the input comparison stage.

5. Claims 1 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Perrier et al (US 6,842,068).

Perrier et al discloses a voltage regulator (20) comprising an input stage (31) having first (+) and second (-) inputs and an output, a reference voltage circuit (23) coupled to the first input of the input stage, an output stage (29) coupled to the second input of the input stage, a gain stage (22) comprising a buffer device (33) providing isolation between the output of the input stage and a drive circuit (34) which is coupled to the output stage, an impedance (24) coupled to the second input of the input stage and to the output stage, and a constant bias current device (53) coupled to the input stage.

6. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Dearn et al (US 6,856,124).

Dearn et al discloses a voltage regulator (figure 3) comprising an input stage (33) having first (+) and second (-) inputs and an output, a reference voltage circuit (circuit providing  $V_{ref}$  not shown) coupled to the first input of the input stage, an output stage (36) coupled to the second input of the input stage, and a gain stage comprising a buffer device (34) providing isolation between the output of the input stage and a FET drive circuit (35, details shown in figure 6) which is coupled to the output stage.

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7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 5 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Dobkin et al.

Dobkin et al teaches a voltage regulation circuit as explained above and as recited by claim 5 except for specifying that the buffer device has a beta of at least 1000. It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the voltage regulation circuit of Dobkin et al by specifying that the buffer device has a beta of at least 1000 since it has been held that where the general conditions of the claims are disclosed in the cited prior art, discovering the optimum or workable value of a result effective variable involves only routine skill in the art.

9. Claims 7 and 21 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Dobkin et al.

Dobkin et al teaches a low dropout voltage regulation circuit as explained above and as recited by claims 7 and 21 except for utilizing a PTAT circuit. Official notice is taken that utilizing a PTAT circuit to provide temperature independence in voltage regulators was an old and known expedient in the art at the time of the invention. It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the low dropout voltage regulation circuit of Dobkin et al by utilizing a PTAT circuit in order to provide temperature independence.

10. Claim 11 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Dobkin et al in combination with Dearn et al .

Dobkin et al teaches a low dropout voltage regulation circuit as explained above and as recited by claim 11 except for utilizing a FET in the drive circuit. Dearn et al teaches that voltage regulation circuits with a FET (63) in the drive circuit (see figure 6) were old and known in the art at the time of the invention. It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the low dropout voltage regulation circuit of Dobkin et al by utilizing a FET in the drive circuit as taught by Dearn et al in order to derive the known advantages and benefits of FET's.

11. Claims 12 and 20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Dobkin et al in combination with Perrier et al .

Dobkin et al teaches a low dropout voltage regulation circuit as explained above and as recited by claims 12 and 20 except for utilizing an impedance and a constant bias current transistor. Perrier et al teaches that voltage regulator circuits comprising an impedance (24) and a constant bias current transistor (53) were old and known in the art at the time of the invention. It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the low dropout voltage regulation circuit of Dobkin et al by utilizing an impedance as taught by Perrier et al in order to provide a desired feedback transfer function and a constant bias current transistor as taught by Perrier et al in order to provide more stable operation of the voltage regulator.

12. Claims 3, 4, 10, 13, 14, and 16-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Tesch (US 4,908,566), Chan (US 5,563,501), Rin-Mora et al US 6,046,577), Xi (US 6,246,221), Castelli et al (US 6,300,749), Stanescu et al (US 6,518,737), Pardoen (US 6,559,623), Pulkin et al (US 6,573,694), Biagi et al (US 6,700,360), Gough (US 6,707,340), Xi (US 6,806,690), Nakajima et al (US 6,894,469), Banerjee et al (US 6,933,772), and Zhang et al (US 6,977,490) are cited to show voltage regulation circuits old and known in the art at the time of the invention.

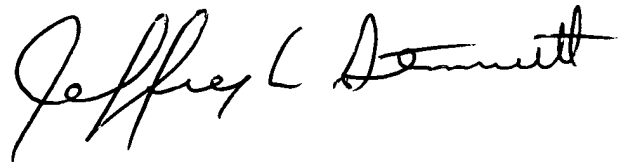
14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey L. Sterrett whose telephone number is (571) 272-2085. The examiner can normally be reached on Monday-Thursday & 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Karl D. Easthom can be reached on (571) 272-1989. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jeffrey L. Sterrett  
Primary Examiner  
Art Unit 2838

A handwritten signature in black ink, appearing to read "Jeffrey L. Sterrett", written in a cursive style.